



JC04 Rec'd PCT/PTO 05 JUL 2005

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**CERTIFICATE OF MAILING**

Hereby certify that this paper and every paper referred to therein as being enclosed is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below

Date: July 1, 2005

By: Jennifer Arch

Attorney Docket No. 100716-61

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT : Manfred T. REETZ et al  
SERIAL NO. : 10/530,818  
CUSTOMER NO. : 27384  
FILED : April 8, 2005  
FOR : MIXTURES OF CHIRAL MONOPHOSPHORUS COMPOUNDS  
USED AS LIGAND SYSTEMS FOR ASYMMETRIC TRANSITION  
METAL CATALYSIS  
ART UNIT : To Be Assigned  
EXAMINER : To Be Assigned

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**SECOND INFORMATION DISCLOSURE STATEMENT**

SIR:

Pursuant to 37 CFR §§ 1.56, 1.97 and 1.98, Applicants respectfully request that the Examiner consider the references listed on the attached Form PTO-1449.

**I. Timeliness, Fees and Certifications in lieu of Fees**

☒ A. This information disclosure statement is being filed within three months of the filing date of the application, or within three months of entry into the national stage, or before the mailing of a first Office Action on the merits. Pursuant to 37 CFR § 1.97(b), consideration of this information disclosure statement does not require a fee or a statement under 37 CFR §

1.97(e). However, should the Assistant Commissioner determine that a fee is, in fact, due, the Assistant Commissioner is hereby authorized to charge the fee to Deposit Account No. 14-1263.

☐ B. This information disclosure statement is being filed after the period in A above, but before the mailing of either a final action or a notice of allowance. Pursuant to 37 CFR § 1.97(c), consideration of this information disclosure statement requires a fee or a statement under 37 CFR § 1.97(e):

☐ 1. The Assistant Commissioner is hereby authorized to charge the fee set forth in 37 CFR § 1.17(p) to Deposit Account No. 14-1263.

☐ 2. Applicants hereby state that each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.

☐ 3. Applicants hereby state that no item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign patent application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 CFR § 1.56 more than three months prior to the filing of this information disclosure statement.

☐ C. This information disclosure statement is being filed after the period specified in B above, but on or before the payment of the issue fee. Pursuant to 37 CFR § 1.97(d), consideration of this information disclosure statement requires a petition, which Applicants hereby request, and payment of the petition fee, which is set forth in 37 CFR § 1.17(i), and which the Assistant Commissioner is hereby authorized to charge to Deposit Account No. 14-1263. Consideration of this information disclosure statement also requires a statement under 37 CFR § 1.97(e):

☐ 1. Applicants hereby state that each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement.

☐ 2. Applicants hereby state that no item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign patent application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in 37 CFR § 1.56 more than three months prior to the filing of this information disclosure statement.

## **II. Copies of Listed References**

☒ A. Copies of all references listed on the attached Form PTO-1449 are being supplied. Copies of U.S. patents are not included pursuant to Pre-OG Notice dated July 11, 2003.

☐ B. Copies of all references listed on the attached Form PTO-1449 have already been supplied during the prosecution of prior application Serial No. \_\_\_\_, filed \_\_\_\_, from which the present application claims priority pursuant to 35 USC § 120. Therefore, pursuant to 37 CFR § 1.98(d), copies of the references listed on the attached Form PTO-1449 are not now being supplied.

☐ C. This application is a PCT national stage application, all references listed on the attached Form PTO-1449 were cited in the international search report, and PCT/DO/EO/903 indicates that both the international search report and the copies of the references listed on the attached Form PTO-1449 are in this national stage file. Therefore, copies of the references listed on the attached Form PTO-1449 are not now being supplied.

## **III. Concise Statement of Relevance**

☐ A. All references listed on the attached Form PTO-1449 are in the English language, and, therefore, a concise statement of relevance is not required.

☐ B. All references listed on the attached Form PTO-1449 are referred to in the specification and/or were cited in the international search report, and a copy of that search report, which indicates the degree of relevance found by the Search Authority, is attached.

The Examiner will note that English language counterparts or Abstracts of non-English language references are also enclosed, as follows:

☐ C. All references listed on the attached Form PTO-1449 were cited in the search report issued by the \_\_\_\_\_ Patent Office, and an English-language version of that search report, which indicates the degree of relevance found by that Patent Office, is attached.

☐ D. This application is a PCT national stage application, all references listed on the attached Form PTO-1449 were cited in the international search report, and a copy of that search report, which indicates the degree of relevance found by the International Search Authority, is attached.

☐ E. All listed on the attached Form PTO 1449 were cited during the prosecution of the prior application indicated above under II.B.

#### **IV. Additional Information**

☐ A. In addition to the references listed on the attached Form PTO-1449, Applicants wish to bring to the attention of the Examiner the following abandoned or co-pending U.S. patent applications:

[Pursuant to 37 CFR § 1.98(a)(2)(iii), copies of these applications are not being submitted.]

☐ B. In addition of the references listed on the attached Form PTO-1449, Applicants wish to bring to the attention of the Examiner the information provided on the attached sheet.

Consideration of the foregoing in relation to this application is respectfully requested.

Respectfully submitted,

NORRIS McLAUGHLIN & MARCUS, P.A.

By 

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**INFORMATION DISCLOSURE****STATEMENT BY APPLICANT'S**

(Form PTO-1449)

**Complete if Known**

Application Number	10/530,818
Filing Date:	April 8, 2005
First Named Inventor	Manfred T. REETZ et al
Art Unit	To Be Assigned
Examiner Name:	To Be Assigned
Attorney Docket Number:	100716-61 (KGB)

Sheet 1 of 2

**U.S. PATENT DOCUMENTS**

Examiner's Initials*	Cite No. <sup>1</sup>	Document Number Number-Kind Code <sup>2</sup>	Publication Date MM-DD-YYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA				

**FOREIGN PATENT DOCUMENTS**

Examiner's Initials*	Cite No.	Foreign Patent Document Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup>	Publication Date MM-DD-YYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
	AB					

**NON PATENT LITERATURE DOCUMENTS**

Examiner's Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
/JM/	AC	B. CORNILS et al.; "Applied Homogeneous Catalysis with Organometallic Compounds A comprehensive Handbook in Two Volumes"; (1996); VCH Verlagsgesellschaft mbH, Weinheim, Germany	
	AD	W. S. KNOWLES et al; "Asymmetric Hydrogenations (Nobel Lecture)"; The Nobel Prize in Chemistry 2001; (2002), pages 1998-2007 Wiley-VCH Verlag GmbH, Weinheim, Germany	
	AE	R. NOYORI; "Asymmetric Catalysis: Science and Opportunities (Nobel Lecture) (2002) pages 2008-2022 Wiley-VCH Verlag GmbH, Weinheim, Germany	
	AF	A. MIYASHITA et al; "Synthesis of 2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl (BINAP), an Atropisomeric Chiral Bis(triaryl)phosphine, and it's use in the Rhodium (I)-Catalyzed Asymmetric Hydrogenation of $\alpha$ -(Acylamino)acrylic Acids"; Journal of American Chemical Society (1980) Vol. 102, pages 7932-7934	
	AG	M. BURK et al.; "Asymmetric Catalytic Synthesis of $\beta$ -Branched Amino Acids via Highly Enantioselective Hydrogenation Reactions"; Journal of American Chemical Society (1995) Vol. 117, pages 9375-9376	
	AH	G. ZHU et al; "Highly Enantioselective Rh-Catalyzed Hydrogenations with a New Chiral 1,4-Bisphosphine Containing a Cyclic Backbone"; Journal of American Chemical Society (1997) Vol. 119, pages 1799-1800	
	AI	M. BURK et al; "A Convenient Asymmetric Synthesis of $\alpha$ -1-Arylalkylamines through the Enantioselective Hydrogenation of Enamides"; Journal of American Chemical Society (1996) Vol. 118, pages 5142-5143	
	AJ	M. T. REETZ, "Combinatorial and Evolution-Based Methods in the Creation of Enantioselective Catalysts"; Agnew. Chem. Int. Ed. (2001) Vol. 40, pages 284-310	

**EXAMINER SIGNATURE:** /James McDonough/**DATE CONSIDERED:** 08/27/2008

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>see Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>for Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

The collection of information is required by 37 CFR 1.197 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT'S</b> (Form PTO-1449)		<b>Complete if Known</b>	
		Application Number	10/530,818
		Filing Date:	April 8, 2005
		First Named Inventor	Manfred T. REETZ et al
		Art Unit	To Be Assigned
		Examiner Name:	To Be Assigned
Sheet 2	of 2	Attorney Docket Number: 100716-61 (KGB)	
<b>NON PATENT LITERATURE DOCUMENTS CONTINUED</b>			
Examiner's Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
/JM/	AK	S. DAHMEN et al; "Combinatorial Methods for the Discovery and Optimisation of Homogeneous Catalysts"; Synthesis (2001), No. 10, pages 1431-1449	
	AL	M. T. REETZ, et al.; "New Diphosphite Ligands for Catalytic Asymmetric Hydrogenation: The Crucial Role of Conformationally Enantiomeric Diols"; Agnew. Chem. Int. Ed. (1999), Vol. 38, No. 1/2; pages 179-181	
	AM	R. SELKE, "Carbohydrate phosphinites as chiral ligands for asymmetric synthesis catalyzed by complexes"; Journal of Organometallic Chemistry, 370 (1989) pages 249-256.	
	AN	M. T. REETZ, et al.; "Diphosphonites as highly efficient ligands for enantioselective rhodium-catalyzed hydrogenation"; Chem. Commun., (1998) pages 2077-2078.	
	AO	M. T. REETZ et al; "Rhodium-catalyzed enantioselective hydrogenation using chiral monophosphonite ligands"; Tetrahedron Letters 41 (2000) pages 6333-6336.	
	AP	C. CLAVER et al.; "Biarylphosphonites: a class of monodentate phosphorus(III) ligands that outperform their chelating analogues in asymmetric hydrogenation catalysis"; Chem. Commun., (2000) pages 961-962.	
	AQ	M. T. REETZ, et al.; "Highly Enantioselective Rh-Catalyzed Hydrogenation Reactions Based on Chiral Monophosphite Ligands"; Agnew. Chem. Int. Ed. (2000) Vol. 39, No. 21; pages 3889-3890.	
	AR	I. V. KOMAROV et al.; "Highly Enantioselective of Not? - Chiral Monodentate Monophosphorus Ligands in the Asymmetric Hydrogenation"; Agnew. Chem. Int. Ed. (2001) Vol. 40, No. 7; pages 1197-1200.	
	AS	G. WILKINSON; "Comprehensive Coordination Chemistry" Pergamon Press, (1987)	
	AT	E. N. JACOBSEN et al; "Comprehensive Asymmetric Catalysis, Vol. I-II, Springer, Berlin (1999)	
	AU		
EXAMINER SIGNATURE: /James McDonough/		DATE CONSIDERED: 08/27/2008	
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>see Kinds Codes of USPTO Patent Documents at <a href="http://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>for Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.</p> <p>The collection of information is required by 37 CFR 1.197 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.</p> <p>If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.</p>			